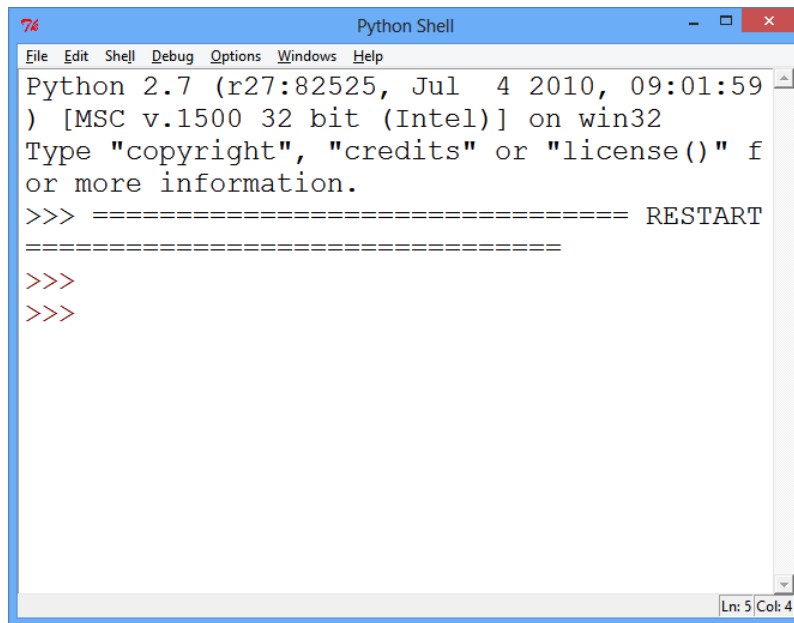


Programming in Python: IDLE



Python Shell: Single Commands

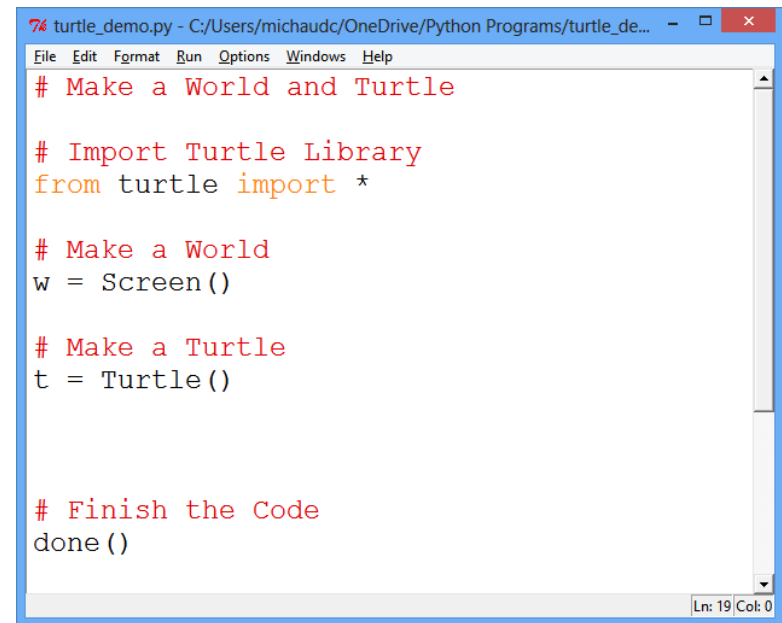


A screenshot of the Python Shell window. The title bar reads "Python Shell". The menu bar includes "File", "Edit", "Shell", "Debug", "Options", "Windows", and "Help". The text area shows the following content:

```
Python 2.7 (r27:82525, Jul 4 2010, 09:01:59
) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" f
or more information.
>>> ===== RESTART
=====
>>>
>>>
```

The status bar at the bottom right indicates "Ln: 5 Col: 4".

Edit Window: Write Programs



A screenshot of the Edit Window showing a file named "turtle_demo.py". The title bar reads "turtle_demo.py - C:/Users/michaudc/OneDrive/Python Programs/turtle_de...". The menu bar includes "File", "Edit", "Format", "Run", "Options", "Windows", and "Help". The text area shows the following code:

```
# Make a World and Turtle

# Import Turtle Library
from turtle import *

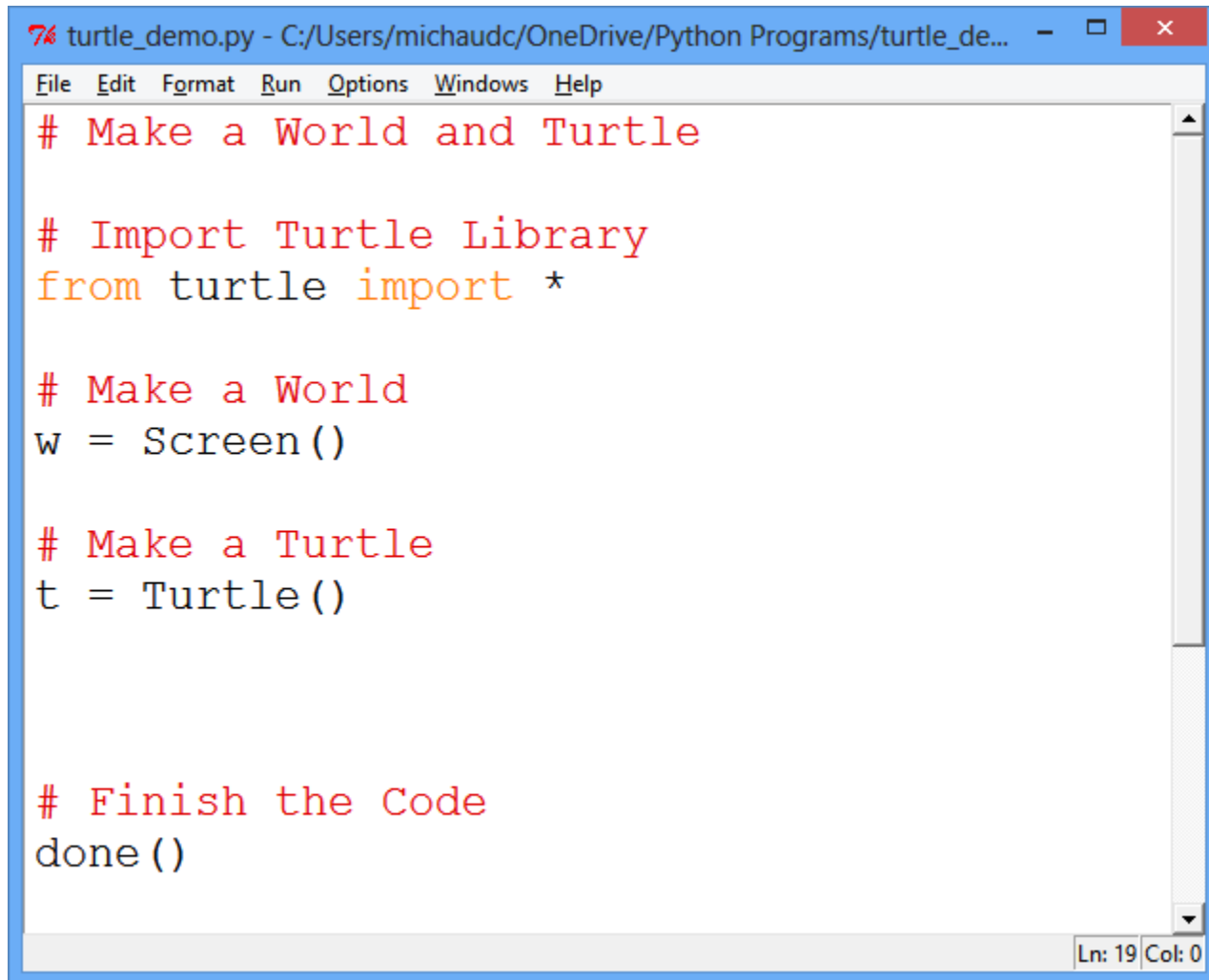
# Make a World
w = Screen()

# Make a Turtle
t = Turtle()

# Finish the Code
done()
```

The status bar at the bottom right indicates "Ln: 19 Col: 0".

Python Turtle Programming: Make a World and a Turtle

A screenshot of a Python IDE window titled 'turtle_demo.py - C:/Users/michaudc/OneDrive/Python Programs/turtle_de...'. The window has a menu bar with 'File', 'Edit', 'Format', 'Run', 'Options', 'Windows', and 'Help'. The main text area contains the following Python code:

```
# Make a World and Turtle

# Import Turtle Library
from turtle import *

# Make a World
w = Screen()

# Make a Turtle
t = Turtle()

# Finish the Code
done()
```

The status bar at the bottom right shows 'Ln: 19 Col: 0'.

Available Functions for Turtles

Function	Example	Description
<code>t.forward(steps)</code>	<code>t.forward(100)</code>	Move forward by the specified pixels
<code>t.backward(steps)</code>	<code>t.backward(100)</code>	Move backward the specified pixels
<code>t.left(degrees)</code>	<code>t.left(90)</code>	Turn left by specified degrees
<code>t.right(degrees)</code>	<code>t.right(90)</code>	Turn right by specified degrees
<code>t.color(string)</code>	<code>t.color('red')</code>	Change turtle color
<code>t.penup()</code>	<code>t.penup()</code>	Pick up pen.
<code>t.pendown()</code>	<code>t.pendown()</code>	Put down pen.
<code>t.goto(x, y)</code>	<code>t.goto(300, 300)</code>	Move turtle to a given x and y position.

Loops: Repeat a Section of Code in Python

```
# Loop Example
for count in range(4):
    t.forward(100)
    t.left(90)
```

- `count` is the index variable.
- `range(4)` means 'repeat 4 times counting 0, 1, 2, 3'
- Remember to use the `:` after `range()`
- Remember the tabs to place the code in the loop

Functions: Teach the robot some routines

```
# Function: draw a square
def drawSquare(size):
    for count in range(4):
        t.forward(size)
        t.left(90)
```

- To call a function, Type:

```
drawSquare(50)
```

```
# Draws a square size of 50
```

Complete Sample Code

```
74 turtle_demo.py - C:/Users/michaudc/OneDrive/Python Programs/turtle_de... - □ ×
File Edit Format Run Options Windows Help
# Make a World and Turtle

# Import Turtle Library
from turtle import *

# Make a World
w = Screen()

# Make a Turtle
t = Turtle()
t.color('red')

# Function: draw a square
def drawSquare(size):
    for count in range(4):
        t.forward(size)
        t.left(90)

# Call Code
drawSquare(100)
drawSquare(50)

# Finish the Code
done()
```

